ABSTRACT

A semiconductor device including a contact pad and circuit metallization on the surface of an integrated circuit (IC) chip comprises a stack of protection layers over the surface of the chip. The stack consists of a first inorganic layer (303, preferably silicon nitride) on the chip surface, followed by a polymer layer (306, preferably benzocyclobutene) on the first inorganic layer (303), and finally an outermost second inorganic layer (310, preferably silicon dioxide) on the polymer layer (303). A window (301a) in the stack of layers exposes the metallization (301) of the IC. A patterned seed metal layer (307, preferably copper) is on the metallization (301) in the window and on the second inorganic layer (310) around the window. A buffer metal layer (308, preferably copper) is positioned on the seed metal layer (307). A metal reflow element (309) is attached to the buffer metal (308).